MAINTENANCE
and
OPERATING INSTRUCTIONS

Read these instructions carefully before operating unit. Have it handy for ready reference at all times.

BLUE M

Magni Whirl®

Patents Pending

= MW

FULL VISIBILITY
JAR BATHS

BLUE M ELECTRIC COMPANY

138th and Chatham Street

Blue Island, Illinois

Manufacturers of ovens, furnaces and related Controlled Laboratory, Pilot Plant and Production Equipment

OPERATING AND MAINTENANCE INSTRUCTIONS FOR BLUE M*MAGNI-WHIRL®
VISIBILITY JAR BATHS (PYREX BRAND GLASS). *patents pending

I. ASSEMBLY: (Refer to Assembly Procedure shown on Drawing #WD - 397)

a) This bath shipped in two cartons. Parts consist of base, jar, element and control assembly, support rods, base plate and counterweighted pump plate. Carefully unpack parts and assemble.
b) Set jar on BASE by inserting magnet pole piece thru center of magnet coil. Magnet coil is spring mounted and will be compressed by weight of jar and/or clamping support rods in place.
c) Set CIRCULAR BASE PLATE (stainless steel) into bottom of jar.
d) Set ELEMENT & CONTROL ASSEMBLY in place on rear support rod. Adjust nut on rod so bottom of control box rests flat on lip of jar. Lock securely in place with second nut.
e) Plug control cable into female receptacle at rear of base.
f) Slip (2) jar retaining clips over (2) front support rods and tighten hex nuts to hold jar in place.
g) Set AGITATOR PLATE in position on circular base plate. Two (2) holes punched along pivot point must fit over (2) guide pins on circular base plate. This holds agitator plate centered in jar. Relative position of agitator plate with respect to front, back, or sides is not important.

II. INSTALLATION:

a) Plug line cord into suitable 110V. 50/60 C. A.C. line. ALL VISIBILITY JAR BATHS ARE WIRED FOR 110V. 50/60 C. A.C. Note: Also may be used on 50 cycle A.C.
b) Element wattage and temperature ranges are as follows:

MODEL NO.	WATTAGE	TEMP. RANGE
MW - 1150	200	Room to 70°C.
MW - 1152	300	Room to 100°C.
MW - 1160	400	Room to 70°C.
MW - 1162	600	Room to 100°C.
MW - 1170	1 200	Room to 70°C.
MW - 1172	1 600	Room to 100°C.

NOTE: Model No. MW-1172 has a high wattage for normal 110 Volt line. Be sure this model is connected to a power source of sufficient capacity to operate it efficiently. Low line voltage is most common cause of agitator failure on this model.

c) Do not fail to ground unit. Connect separate wire from conduit system to ground lug provided on base.

III. GENERAL OPERATION:

a) IMPORTANT: Be sure elements are covered with water before turning unit on.
b) Do not use oil in these baths. Watt density of elements is too high for oil use.
c) Turn main toggle switch to "ON" position. Red pilot light should be on and magnetic agitator will start. Agitator plate should pulse once every 3 to 5 seconds.
d) Set Dual Microtrol to desired temperature. Refer to dial plate and to Section V for complete details of Mircrotrol and temperature selector switch settings and use. Verify all settings with thermometer.
e) Amber pilot light will cycle "ON" and "OFF" in response to thermostat and heating element action.
f) Models MW-1170, LM-1172 are equipped with an auxiliary element switch for High or Low wattage input. Use Low for best control at Low and Med. temperatures.

NOTE: MAXIMUM TEMPERATURE OF 100°C. CANNOT ALWAYS BE REACHED. MOST SATISFACTORY RESULTS OBTAINED AT TEMPERATURES BELOW 85°C.
Heat losses are high due to uninsulated glass container and large exposed evaporating surface area.
Wattage required to reach 100°C. on larger units would be in excess of maximum permissible load on 110 V. service.
It is not practical to expect accurate temperature control at or near the boiling point of water. If extremely accurate control is desired in this range, we recommend the use of our oil bath series of Magni-Whirl.

BATHS SHOULD BE COVERED WHEN OPERATING ABOVE 85°C.

g) BATHS EQUIPPED WITH TIMERS: Set timer to desired number of minutes or hours of operation. Leave timer shunt switch "OFF".
If timer action is not required, turn timer shunt switch "ON". This allows bath to operate regardless of timer position.

IV. FACTS ON HOW THIS UNIQUE (PATENTED) MAGNI-WHIRL WORKS.

Blue M Magni - Whirl feature consists of a powerful D. C. Electro Magnet and timing mechanism to pulse the magnet. A stainless steel counterweighted agitator plate moves up and down as timer energizes and deenergizes magnet. This action sets up a liquid circular motion current from bottom to top of jar and assures uniform temperature through-out the volume.

V. THERMOSTAT SETTINGS:

An UP-DOWN toggle switch allows ready selection of any two commonly used temperatures. The plate may be marked for these particular temperatures if desired. Supposing it is desired to have, say 60°C. and 80°C. as the particular temperatures, then:

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RELATIVE HUMIDITY TABLE

DRY BULB TEMPERATURE (°F)

DEPRESSION OF WET BULB (°F)	30 31 32 33 34	35 36 37 38 39	40 41 42 43 44	45 46 47 48 49	50 51 52 53 54	55 56 57 58 59	60 61 62 63 64	65 66 67 68 69	70 71 72 73 74	75 76 77 78 79	80 82 84 86 88 90	DEPRESSION OF WET BULB (°F)
1	89 89 89 90 90	91 91 91 91 92	92 92 92 92 93	93 93 93 93 93	93 94 94 94 94	94 94 94 94 94	94 94 94 95 95	95 95 95 95 95	95 95 95 95 95	96 96 96 96 96	96 96 96 96 96 96	1
2	78 78 79 80 81	81 82 83 83 83	83 84 85 85 85	86 86 86 86 86	87 87 87 87 88	88 88 88 88 89	89 89 89 89 90	90 90 90 90 90	90 90 90 91 91	91 91 91 91 91	91 92 92 92 92 92	2
3	67 68 69 70 71	72 73 74 75 75	75 76 77 77 78	78 79 79 79 80	80 81 81 81 82	82 82 82 83 83	83 84 84 84 84	85 85 85 85 85	86 86 86 86 86	86 87 87 87 87	87 88 88 88 88 89	3
4	56 58 59 60 62	63 64 65 66 67	68 69 69 70 71	71 72 72 73 73	74 75 75 75 76	76 76 77 77 78	78 78 79 79 79	80 80 80 80 81	81 81 82 82 82	82 82 83 83 83	83 84 84 84 85 85	4
5	46 47 49 51 52	54 55 57 58 59	60 61 62 63 63	64 65 66 66 67	67 68 69 69 70	70 71 71 72 72	73 73 74 74 74	75 75 75 76 76	77 77 77 78 78	78 78 79 79 79	79 80 80 81 81 81	5
6	36 37 39 41 43	45 46 48 50 51	52 54 55 55 56	57 58 59 60 61	61 62 63 63 64	65 65 66 66 67	68 68 69 69 70	70 71 71 71 72	72 72 73 73 74	74 74 74 75 75	75 76 76 77 77 78	6
7	26 28 30 32 34	36 38 40 42 43	45 46 47 48 49	51 52 53 54 54	55 56 57 58 59	59 60 61 61 62	63 63 64 64 65	66 66 66 67 67	68 68 69 69 69	70 70 71 71 71	72 72 73 73 74 74	7
8	16 18 20 23 25	27 29 31 33 35	37 39 40 42 43	44 45 46 47 48	49 50 51 52 53	54 55 55 56 57	58 58 59 60 60	61 61 62 62 63	64 64 65 65 65	66 66 67 67 68	68 69 69 70 70 71	8
9	6 8 11 14 16	19 21 23 25 27	29 31 33 35 36	38 39 40 41 42	43 45 46 47 48	49 50 50 51 52	53 54 54 55 56	56 57 58 58 59	59 60 61 61 61	62 62 63 63 64	64 65 66 66 67 68	9
10	2 5 8	10 13 15 17 20	22 24 26 28 30	31 32 34 35 36	38 39 40 41 42	43 44 45 46 47	48 49 50 50 51	52 53 53 54 55	55 56 57 57 58	58 59 59 60 60	61 61 62 63 64 65	10
11		2 5 7 10 12	15 17 19 21 23	25 26 28 29 31	32 34 35 36 37	38 39 40 41 42	43 44 45 46 47	48 48 49 50 51	51 52 53 53 54	54 55 56 56 57	57 58 59 60 61 61	11
12		2 5	7 10 12 14 16	18 20 22 23 25	27 28 29 31 32	33 34 35 37 38	39 40 41 42 43	44 44 45 46 47	48 48 49 50 50	51 51 52 53 53	54 55 56 57 57 58	12
13			3 5 8 10	12 14 16 18 19	21 23 24 26 27	28 30 31 32 33	34 35 36 37 38	39 40 41 42 43	44 45 45 46 47	47 48 48 49 50	50 51 52 53 54 55	13
14			1 4	6 8 10 12 14	16 17 19 20 22	23 25 26 27 29	30 31 32 33 34	35 36 37 38 39	40 41 42 42 43	44 44 45 46 46	47 48 49 50 51 52	14
15				2 5 7 9	10 12 14 16 17	19 20 22 23 24	26 27 28 29 30	31 32 33 34 35	36 37 38 39 39	40 41 42 43 43	44 45 46 47 48 49	15
16				1 3	5 7 9 10 12	14 16 17 18 20	21 22 24 25 26	27 29 30 31 32	33 33 34 35 36	37 38 39 39 40	41 42 43 44 46 47	16
17					2 4 6 8	9 11 13 14 16	17 18 20 21 22	24 25 26 27 28	29 30 31 32 33	34 34 35 36 37	38 39 40 42 43 44	17
18					1 3	5 7 8 10 11	13 14 16 17 18	20 21 22 23 24	25 27 28 29 29	30 31 32 33 34	35 36 37 39 40 41	18
19						2 4 6 7	9 10 12 13 15	16 17 19 20 21	22 23 24 25 26	27 28 29 30 31	32 33 35 36 37 39	19
20						1 3	5 7 8 10 11	12 14 15 16 18	19 20 21 22 23	24 25 26 27 28	29 30 32 33 35 36	20
21							1 3 4 6 7	9 10 12 13 14	15 17 18 19 20	21 22 23 24 25	26 28 29 31 32 34	21
22							1 2 4	5 7 8 10 11	12 13 15 16 17	18 19 20 21 22	23 25 26 28 30 31	22
23								2 3 5 6 8	9 10 12 13 14	15 16 17 18 19	20 22 24 26 27 29	23
24								2 3 5	6 7 9 10 11	12 13 14 16 17	18 20 21 23 25 26	24
25								1	3 4 6 7 8	9 11 12 13 14	15 17 19 21 22 24	25
26									1 3 4 5	7 8 9 10 11	12 14 16 18 20 22	26
27									1 3	4 5 6 8 9	10 12 14 16 18 19	27
28										1 3 4 5 6	7 10 12 14 15 17	28
29										1 3	5 7 9 11 13 15	29
30										1	3 5 7 9 11 13	30
31											2 5 7 9 11	31
32											3 5 7 9	32
33											3 5 7	33
34											1 3 5	34
35											1 3	35
36											1	36

HOW TO READ THIS TABLE

The top line of numbers indicates the Air temperature or DRY bulb temperature.

The column of numbers on the left side indicates the difference in degrees between the WET and DRY bulb thermometer readings.

The numbers within the table indicate the percentage of relative humidity.

EXAMPLE

Dry bulb reading is 60.

Wet bulb thermometer is depressed 10 degrees.

The number under 60 and opposite 10 is 48, which indicates that there is 48 percent relative humidity.

RELATIVE HUMIDITY TABLE

DRY BULB TEMPERATURE (°F)

DEPRESSION OF WET BULB (°F)	90 92 94 96 98	100 102 104 106 108	110 112 114 116 118	120 122 124 126 128	130 132 134 136 138	140 142 144 146 148	150 152 154 156 158	160 162 164 166 168	170 172 174 176 178	180 182 184 186 188	190 192 194 196 198	200 205 210	DEPRESSION OF WET BULB (°F)
1	96 96 96 96 96	96 96 97 97 97	97 97 97 97 97	97 97 97 97 97	97 97 97 97 97	97 97 97 97 97	98 98 98 98 98	98 98 98 98 98	98 98 98 98 98	98 98 98 98 98	98 98 98 98 98	98 98 98	1
2	92 92 93 93 93	93 93 93 93 93	93 94 94 94 94	94 94 94 94 94	94 94 94 94 94	95 95 95 95 95	95 95 95 95 95	95 95 95 95 95	95 95 95 96 96	96 96 96 96 96	96 96 96 96 96	96 96 96	2
3	89 89 89 89 89	89 90 90 90 90	90 90 91 91 91	91 91 91 91 91	91 92 92 92 92	92 92 92 92 92	92 93 93 93 93	93 93 93 93 93	93 93 93 94 94	94 94 94 94 94	94 94 94 94 94	94 94 94	3
4	85 85 85 86 86	86 86 87 87 87	87 87 88 88 88	88 88 88 88 89	89 89 89 89 89	89 90 90 90 90	90 90 90 90 90	90 91 91 91 91	91 92 92 92 92	92 92 92 92 92	92 92 92 92 92	92 93 93	4
5	81 82 82 82 82	83 83 83 84 84	84 84 85 85 85	85 85 85 86 86	86 86 86 86 87	87 87 87 87 87	87 87 87 88 88	88 88 88 89 89	89 89 89 89 89	89 90 90 90 90	90 90 90 90 90	90 90 90	5
6	78 78 79 79 79	80 80 80 81 81	81 81 82 82 82	82 83 83 83 83	83 84 84 84 84	84 84 84 85 85	85 85 85 85 85	85 86 86 86 86	86 87 87 87 87	87 87 87 87 87	87 88 88 88 88	88 88 88	6
7	74 75 75 76 76	77 77 77 78 78	78 79 79 79 79	80 80 80 80 81	81 81 81 81 82	82 82 82 82 82	82 83 83 83 83	83 84 84 84 84	84 85 85 85 85	85 85 85 85 85	85 86 86 86 86	86 86 87	7
8	71 72 72 73 73	73 74 74 75 75	75 76 76 76 77	77 77 78 78 78	78 79 79 79 79	79 80 80 80 80	80 81 81 81 81	81 82 82 82 82	82 83 83 83 83	83 83 83 83 83	83 84 84 84 84	84 84 85	8
9	68 68 69 69 70	70 71 71 72 72	73 73 74 74 74	74 75 75 75 76	76 76 76 77 77	77 78 78 78 78	78 79 79 79 79	79 80 80 80 80	80 81 81 81 81	81 81 81 81 82	82 82 82 82 82	82 83 83	9
10	65 65 66 66 67	68 68 69 69 70	70 70 71 71 72	72 72 73 73 73	73 74 74 74 75	75 75 75 76 76	76 76 76 77 77	77 77 78 78 78	78 79 79 79 79	79 79 79 80 80	80 80 80 80 80	80 81 81	10
11	61 62 63 63 64	65 65 66 66 67	67 68 68 69 69	69 70 70 70 71	71 71 72 72 72	73 73 73 73 73	74 74 74 74 75	75 75 75 76 76	76 76 76 77 77	77 77 77 78 78	78 78 78 78 78	79 79 80	11
12	58 59 60 61 61	62 62 63 64 64	65 65 66 66 67	67 67 68 68 68	69 69 69 70 70	70 70 71 71 71	72 72 72 72 73	73 73 73 74 74	74 74 75 75 75	75 75 76 76 76	76 76 76 76 77	77 77 78	12
13	55 56 57 58 58	59 60 60 61 62	62 63 63 64 64	65 65 65 66 66	67 67 67 68 68	68 68 69 69 69	70 70 70 71 71	71 71 72 72 72	72 73 73 73 73	73 74 74 74 74	75 75 75 75 75	75 76 76	13
14	52 53 54 55 55	56 57 58 58 59	60 60 61 61 62	62 63 63 64 64	64 65 65 65 66	66 67 67 67 68	68 68 69 69 69	69 70 70 70 70	70 71 71 71 72	72 72 72 73 73	73 73 73 74 74	74 74 75	14
15	49 50 51 52 53	54 55 55 56 57	57 58 58 59 59	60 60 61 61 62	62 63 63 63 64	64 65 64 64 64	65 66 66 66 66	67 67 67 68 68	69 69 69 69 70	70 70 70 71 71	71 71 71 72 72	72 72 73	15
16	47 48 49 50 50	51 52 53 53 54	55 55 56 57 57	58 58 59 59 60	60 61 61 61 62	62 63 63 63 64	64 64 65 65 65	65 66 66 66 67	67 67 67 68 68	68 69 69 69 69	69 70 70 70 70	70 71 71	16
17	44 45 46 47 48	49 49 50 51 52	52 53 54 54 55	55 56 57 57 58	58 58 59 59 60	60 60 61 61 61	62 62 63 63 63	63 64 64 64 65	65 65 66 66 66	66 67 67 67 67	68 68 68 69 69	69 69 70	17
18	41 42 43 44 45	46 47 48 49 49	50 51 52 52 53	53 54 54 55 56	56 56 57 57 58	58 59 59 59 60	60 60 61 61 61	62 62 62 63 63	63 63 64 64 64	64 65 65 66 66	66 67 67 67 67	67 68 68	18
19	39 40 41 42 43	44 45 46 46 47	48 49 49 50 51	51 52 52 53 54	54 55 55 55 56	56 57 57 57 58	58 59 59 59 59	60 60 60 61 61	62 62 62 63 63	63 64 64 64 64	64 65 65 66 66	66 66 67	19
20	36 37 38 39 40	41 42 43 44 45	46 47 47 48 49	49 50 50 51 52	52 53 53 54 54	54 55 55 55 56	56 57 57 57 57	58 58 58 59 59	60 60 61 61 61	61 62 62 63 63	63 63 63 64 64	64 65 65	20
21	34 35 36 37 38	39 40 41 42 43	44 44 45 46 47	47 48 48 49 50	50 51 51 52 52	53 53 54 54 55	55 56 56 56 57	57 57 58 58 58	59 59 60 60 60	61 61 61 62 62	62 62 63 63 63	63 63 63	21
22	31 32 33 35 36	37 38 39 40 41	42 42 43 44 45	45 46 47 47 48	48 49 49 50 50	51 52 52 53 53	53 54 54 54 55	55 55 56 56 57	57 58 58 58 58	58 59 59 60 60	60 61 61 61 61	61 62 62	22
23	29 30 31 32 34	35 36 37 38 39	40 40 41 42 43	43 44 45 45 46	47 47 48 48 49	49 50 50 51 51	52 52 52 53 53	54 54 55 55 55	55 56 56 57 57	57 58 58 59 59	59 60 60 60 60	60 61 61	23
24	26 28 29 30 32	33 34 35 36 37	38 38 39 40 41	41 42 43 44 44	45 45 46 46 47	47 48 48 49 49	49 50 50 50 51	51 51 52 53 53	53 54 54 55 55	55 56 56 57 57	57 58 58 58 58	58 59 60	24
25	24 25 27 28 29	30 32 33 34 35	36 36 37 38 39	40 40 41 42 42	43 44 44 45 45	46 46 47 47 48	48 48 49 49 50	50 51 51 51 52	52 53 53 53 54	54 54 55 55 55	56 56 57 57 57	57 58 58	25
26	22 23 24 26 27	28 30 31 32 33	34 35 35 36 37	38 39 39 40 41	41 42 43 43 44	44 44 45 45 46	46 47 47 48 48	49 49 49 50 50	51 51 51 52 52	52 53 53 53 54	54 55 55 55 55	55 56 57	26
27	19 21 22 24 25	26 28 29 30 31	32 33 34 34 35	36 37 38 38 39	40 40 41 41 42	43 43 44 44 45	45 46 46 46 47	47 47 48 48 49	49 50 50 50 51	51 51 52 52 52	53 53 54 54 54	54 55 56	27
28	17 19 20 22 23	24 26 27 28 29	30 31 32 33 34	34 35 36 37 37	38 39 39 40 40	41 42 42 43 43	43 44 44 45 45	46 47 47 48 48	48 49 49 50 50	50 50 50 51 51	51 52 52 53 53	53 54 54	28
29	15 17 18 20 21	22 24 25 26 27	28 29 30 31 32	33 34 34 35 36	37 37 38 38 39	39 40 40 41 41	42 42 43 43 44	45 45 46 46 47	47 47 48 48 48	49 49 49 49 50	50 50 51 51 51	52 52 53	29
30	13 15 16 18 19	21 22 23 24 25	26 27 28 29 30	31 32 33 33 34	35 36 36 37 37	38 39 39 40 40	41 41 42 42 43	43 44 44 45 45	45 46 46 47 47	47 48 48 48 48	49 49 50 50 50	51 51 52	30
32	9 11 12 14 15	17 18 19 20 21	23 24 25 26 27	28 29 30 30 31	32 33 33 34 34	35 36 36 37 37	38 38 39 39 40	40 41 41 42 42	42 43 43 44 44	44 45 45 46 46	46 47 47 47 48	48 49 49	32
34	5 7 9 10 12	13 15 16 17 19	20 21 22 23 24	25 26 27 27 28	29 30 30 31 32	32 33 34 34 35	35 36 36 37 38	38 39 39 40 40	40 41 41 42 42	42 43 43 44 44	44 44 45 45 45	46 46 47	34
36	1 3 5 7 8	10 11 13 14 16	17 18 19 20 21	22 23 24 25 25	26 26 27 28 29	30 31 31 32 33	33 34 34 35 35	35 36 37 37 38	38 39 39 40 40	40 41 41 42 42	42 42 42 43 43	43 44 45	36
38	1 3 5	7 8 10 11 12	14 15 16 17 18	19 20 21 22 23	24 24 25 26 27	27 28 29 29 30	30 31 32 32 33	33 34 34 35 35	35 36 36 37 37	37 38 38 39 39	39 40 40 40 41	41 42 43	38
40	2	4 5 7 8 10	11 12 13 14 16	17 18 18 19 20	21 21 22 23 24	25 26 27 27 28	28 29 30 30 31	31 32 32 33 33	33 34 34 35 35	35 36 36 37 37	37 38 38 39 39	39 40 41	40
42		1 2 4 5 7	8 9 11 12 13	14 15 16 17 18	19 20 20 21 22	23 24 25 25 26	27 27 28 28 29	29 30 31 31 31	31 32 32 33 33	33 34 34 34 35	35 36 36 37 37	37 38 39	42
44		1 3 4	6 7 8 9 11	12 13 14 15 16	16 17 18 19 20	21 22 23 23 24	25 25 26 26 27	27 28 29 29 29	29 30 30 31 31	31 32 32 32 33	33 34 34 35 35	35 36 37	44
46		2	3 4 6 7 8	9 10 11 12 13	14 15 16 17 17	18 20 21 21 22	23 23 24 24 25	25 26 27 27 27	27 28 28 29 29	30 30 30 30 31	32 32 33 33 33	33 34 35	46
48			1 2 3 5 6	7 8 9 10 11	12 13 14 15 15	16 18 19 19 20	21 21 22 22 23	23 24 24 25 25	25 26 26 27 27	28 28 28 28 29	30 30 31 31 31	31 32 33	48
50			1 2 4	5 6 7 8 9	10 11 12 13 14	14 15 16 16 17	18 18 19 19 20	21 22 22 23 23	23 24 24 25 25	26 26 26 27 27	28 28 29 29 29	29 31 32	50
52			2	3 4 5 6 7	8 9 10 11 12	12 13 14 14 16	16 16 17 18 18	19 20 20 21 21	22 22 22 23 23	24 24 24 25 26	26 26 28 28 28	28 29 30	52
54				1 2 3 4 5	6 7 8 9 10	11 12 12 13 13	14 15 15 16 16	17 18 18 19 19	20 20 21 21 22	22 22 23 23 24	25 25 26 26 27	27 27 28	54
56				1 2 4	5 6 7 8	9 10 10 11 12	12 14 14 14 14	16 16 16 18 18	18 18 20 20 21	21 21 22 22 22	24 24 24 25 25	25 26 27	56
58					3 4 5 6 7	7 8 9 9 10	11 12 12 13 13	14 14 15 16 16	17 17 18 18 19	19 20 20 21 21	22 22 22 23 23	24 25 26	58
60					1 2 3 4 5	6 6 6 6 8	9 10 10 10 10	12 12 12 13 13	15 16 17 17 18	18 18 18 18 19	20 20 20 21 21	22 23 24	60
65					1	2 3 4 4 5	5 6 7 7 8	9 9 10 10 11	12 12 13 13 14	14 15 16 16 17	17 17 18 18 19	19 20 21	65
70							2 3 4 4 5	6 6 7 7 8	9 9 10 10 11	12 12 13 13 14	14 14 15 15 16	16 17 18	70

BLUE 'M' LINE

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BLUE 'M' LINE

Additional copies of this chart available upon request.

First - SET TOGGLE SWITCH HANDLE UP
Second - Set thermostat knob with white line vertical.
Third - Adjust the top screw, projecting outside the thermostat knob plate to maintain the lowest of the desired two temperatures - 60°C. in the present instance.
Fourth - Set toggle switch handle down.
Fifth - Adjust the lower of the two projecting screws to maintain the higher of the desired two temperatures - 80°C. in the present case.
Note - Wherever there is a wide difference in the two temperatures, it may be necessary to reset the top screw again to the definite low temperature.

Although positioning the knob white line vertical and flipping the toggle switch will repeatedly duplicate the desired temperatures, there may be times when a lower or higher temperature is desired for some particular purpose. In such cases, the knob may be rotated as per instructions on the thermostat plate.

VI. SERVICE INSPECTION:

a) Check incoming line to see that Power Source is okay. Check line cord if used.
b) Check heating elements for possible burn out. Test and/or replace. Check all connections and tighten where necessary.
c) If thermostat does not function properly after a reasonable period of use, which may be from 2 to 5 years depending upon local current supply conditions, automatic control may need replacement. This will be evidenced by sluggishness of control and is the result of worn contacts.
d) To replace neon pilot light lamps if ever necessary unscrew jewel cover. Unscrew old lamp. Test and/or replace.
e) Clean bath as often as possible. Clean stainless steel parts periodically.

VII. SERVICE DATA FOR MAGNI-WHIRL TIMING MECHANISM

NOTE: ENTIRE POWER SUPPLY & TIMING MECHANISM IS MOUNTED ON LARGE ETCHED PANEL AT FRONT OF BASE.

1. FUSED PROTECTION:

a) Each power supply is equipped with a fused limiting resistor, which fully protects the magnet, and the D. C. power supply components against shorts, high and low line voltage or if the timing mechanism stops for any reason. If the timing relay can be heard clicking on and off, but agitator plate is not operating, the fuse has blown due to one of the above causes. Check circuit for possible sources of trouble and replace fuse. See parts list for ordering information.

2. RELAY:

a) The timing relay contacts are made of tungsten and should operate indefinitely without maintenance of any kind. However, if after long periods of operation, the contractor fails to open, or a "stuttering" action is noticed, it is due to dirt and dust particles lodging between the contacts and should be removed as follows:

DO NOT FILE OR SANDPAPER THESE CONTACTS

The proper cleaning method is to insert a smooth hard paper (such as a business card) between the contacts, press them together and withdraw the card.
b) Contacts may require adjustment. When relay armature is closed, clearance between contacts should be equivalent to thickness of a business card. If clearance is excessive, form top contact spring downward until proper clearance is obtained. (Thickness of card).

3. LINE VOLTAGE AND CALIBRATING RESISTOR:

a) These units will operate over a wide range of voltage fluctuations. That is, a bath designed for 110V operation will actually operate from 80 volts to 150 volts with no difficulty. However, the agitator timing mechanism is factory set for optimum performance at 110V. A line voltage drop of 10 volts may render the timing mechanism inoperative. (See paragraph C and D below).
b) The term "optimum performance" here means that the magnet "on" time is just long enough for the agitator plate to contact the bottom of bath. The plate must contact the bottom of the tank for maximum agitation. Immediately, upon reaching the bottom, the plate should release and reassume position for the next down stroke.
c) If line voltage is considerably lower than 110V. the magnet "on" time will be longer and the pump plate will "stick" on the bottom for a short time. Or, the timing relay may fail to open at all and the plate will pull down permanently until the fuse blows. Correct this by loosening sliding band on calibrating resistor and moving band to the right, facing transite panel. This will raise the voltage to timing relay and decrease the magnet "on" time.
d) If line voltage is high, this will cause a very short magnet "on" time which results in a quick pulse of the pump plate thereby preventing it from reaching bottom. Correct this by sliding band to the left, which will increase the magnet "on" time.

4. NOTE:

Calibrating resistor is located at the top of the transite power supply panel, adjacent to timing relay. When making adjustments, shut power off and wait approximately 20 seconds. Large condenser discharges thru resistor for several seconds after power is off. Remove screws from base panel and unplug power supply from circuit.

Contact factory if further information is required.

MP MASTER
MA34371